CLAIMS

1. A method for providing a dynamic multi-dimensional commodity modeling process, comprising:

creating a commodity hierarchy data structure comprising:

at least one top level node; and

at least one leaf node dependent upon said at least one top level node;

assigning attributes to nodes in said hierarchy, said attributes sharing uniform characteristics; and

selectively assigning at least one dimensional attribute to a node operable for invoking an analysis based upon said at least one dimensional attribute;

wherein dependent nodes inherit dimensional attributes assigned to corresponding upper level nodes.

2. The method of claim 1, further comprising:

at least one secondary level node dependent on said at least one top level node; and

at least one leaf node dependent on said at least one secondary level node.

3. The method of claim 1, wherein said attributes are dynamically alterable during instantiation of said multi-dimensional commodity modeling process.

4. The method of claim 1, wherein said dimensional attributes are dynamically alterable during instantiation of said multi-dimensional commodity modeling process.

5. The method of claim 1, wherein said invoking an analysis based upon said at least one dimensional attribute includes determining performance patterns related to a constituent.

6. The method of claim 2, wherein said at least one secondary level node comprises at least one nested sub-commodity.

7. The method of claim 1, wherein said at least one dimensional attribute is selectively assignable to at least one of:
        a top level node; and
        a leaf level node.

8. The method of claim 2, wherein said at least one dimensional attribute is selectively assignable to at least one secondary level node.

1 9. A dynamic multi-dimensional commodity model, comprising:
2   a commodity hierarchical structure comprising:
3   at least one top level node; and
4   at least one leaf level node;
5   uniform attributes associated with nodes in said
6 commodity hierarchical structure; and
7   at least one dimensional attribute selectively assigned
8 to at least one node in said commodity hierarchical
9 structure, said at least one dimensional attribute operable
10 for invoking an analysis;
11   wherein said at least one dimensional
12 attribute is inherited down to corresponding nodes in said
13 commodity hierarchical structure.

1 10. The dynamic multi-dimensional commodity model of claim
2 9, further comprising:
3   at least one secondary level node dependent on said at
4 least one top level node; and
5   at least one leaf node dependent on said at least one
6 secondary level node.

1 11. The dynamic multi-dimensional commodity model of claim
2 9, wherein said uniform attributes are dynamically alterable
3 during instantiation of said multi-dimensional commodity
4 model.

1 12. The dynamic multi-dimensional commodity model of claim
2 9, wherein said at least one dimensional attribute is
3 dynamically alterable during instantiation of said multi-
4 dimensional commodity model.

1   13.   The dynamic multi-dimensional commodity model of claim
2   9, wherein said analysis includes determining performance
3   patterns related to a constituent.

1   14.   The dynamic multi-dimensional commodity model of claim
2   10, wherein said at least one secondary level node comprises
3   at least one nested sub-commodity.

1   15.   The dynamic multi-dimensional commodity model of claim
2   9, wherein said at least one dimensional attribute is
3   selectively assignable to at least one of:
4   a top level node; and
5   a leaf level node.

1   16.   The dynamic multi-dimensional commodity model of claim
2   10, wherein said at least one dimensional attribute is
3   selectively assignable to said at least one secondary level
4   node.

1   17.   The dynamic multi-dimensional commodity model of claim
2   9, wherein said uniform attributes comprise at least one of:
3   sampling criteria;
4   period definition;
5   history definition; and
6   type of measure.

1   18.   The dynamic multi-dimensional commodity model of claim
2   17, wherein said sampling criteria includes at least one of:
3   a product type;
4   an operations;
5   a step; and
6   a source.

1 19. The dynamic multi-dimensional commodity model of claim
2 17, wherein said period definition includes a unit of time
3 to apply a specified analytic.

1 20. The dynamic multi-dimensional commodity model of claim
2 17, wherein said history definition includes a number of
3 periods to be applied to a specified analytic.

1 21. The dynamic multi-dimensional commodity model of claim
2 17, wherein said type of measure includes a type of analytic
3 to be applied, said type of analytic including a Shewhart
4 Control Chart.

1 22. The dynamic multi-dimensional commodity model of claim
2 9, wherein said dimensional attributes includes at least one
3 of:
4   a performance tolerance;
5   a noise filter;
6   an oscillation thresholds or trends;
7   consecutive trending; and
8   negative performance threshold.

1 23. The dynamic multi-dimensional commodity model of claim
2 22, wherein said performance tolerance defines a standard
3 deviation from a mean.

1 24. The dynamic multi-dimensional commodity model of claim
2 22, wherein said noise filter defines a statistically
3 significant sample size for a period.

1 25. The dynamic multi-dimensional commodity model of claim
2 22, wherein said oscillation thresholds or trends define
3 unwanted change oscillating around a mean within limits.

1 26. The dynamic multi-dimensional commodity model of claim
2 22, wherein said negative performance threshold defines
3 absolute value limits.

1 27. A quality management system for utilizing dynamic
2 multi-dimensional commodity modeling, comprising:
3   a data collection component operable for collecting raw
4 data;
5   a dynamic multi-dimensional commodity model component;
6   a commodity constituent model generated by said dynamic
7 multi-dimensional commodity model component;
8   a closed loop/corrective action component operable for
9 resolving nonconformance issues resulting from analysis;
10   an analytic engine in communication with said data
11 collection component, said multi-dimensional commodity model
12 component, and said closed loop/corrective action component;
13   wherein said analytic engine performs:
14   receiving said raw data from said data
15 collection component;
16   receiving said commodity constituent model;
17   performing analytics on said raw data
18 according to rules defined by said commodity constituent
19 model; and
20   if said performing analytics results in a
21 nonconformance, transmitting nonconformance data to said
22 closed loop/corrective action component.

28. The quality management system of claim 27, wherein said dynamic multi-dimensional commodity model component performs:

creating a commodity hierarchy data structure comprising:

at least one top level node; and

at least one leaf node dependent upon said at least one top level node;

assigning attributes to nodes in said hierarchy, said attributes sharing uniform characteristics; and

selectively assigning at least one dimensional attribute to a node operable for invoking an analysis based upon said at least one dimensional attribute;

wherein dependent nodes inherit dimensional attributes assigned to corresponding upper level nodes.

29.   A storage medium encoded with machine-readable computer program code for providing a dynamic multi-dimensional commodity modeling process, the storage medium including instructions for causing a computer to implement a method, comprising:

creating a commodity hierarchy data structure comprising:

at least one top level node; and

at least one leaf node dependent upon said at least one top level node;

assigning attributes to nodes in said hierarchy, said attributes sharing uniform characteristics; and

selectively assigning at least one dimensional attribute to a node operable for invoking an analysis based upon said at least one dimensional attribute;

wherein dependent nodes inherit dimensional attributes assigned to corresponding upper level nodes.

30.   The storage medium of claim 29, further comprising instructions for causing said computer to implement:

at least one secondary level node dependent on said at least one top level node; and

at least one leaf node dependent on said at least one secondary level node.

31.   The storage medium of claim 29, wherein said attributes are dynamically alterable during instantiation of said multi-dimensional commodity modeling process.

32. The storage medium of claim 29, wherein said dimensional attributes are dynamically alterable during instantiation of said multi-dimensional commodity modeling process.

33 The storage medium of claim 29, wherein said invoking an analysis based upon said at least one dimensional attribute includes determining performance patterns related to a constituent.

34. The storage medium of claim 30, wherein said at least one secondary level node comprises at least one nested sub-commodity.

35. The storage medium of claim 29, wherein said at least one dimensional attribute is selectively assignable to at least one of:
    a top level node; and
    a leaf level node.

36. The storage medium of claim 30, wherein said at least one dimensional attribute is selectively assignable to at least one secondary level node.